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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,037	01/23/2004	Ying-Cheng Chuang	B-5017DIV 621541-7	7960
36716	7590	06/03/2005	EXAMINER	
LADAS & PARRY			THOMAS, TONIAE M	
5670 WILSHIRE BOULEVARD, SUITE 2100			ART UNIT	
LOS ANGELES, CA 90036-5679			PAPER NUMBER	

2822

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/764,037

Applicant(s)

CHUANG ET AL.

Examiner

Toniae M. Thomas

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 11-18 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☒ Certified copies of the priority documents have been received in Application No. 10/395,991.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This action is a first Office action on the merits of Application Serial No. 10/764,037, which is a divisional of Application Serial No. 10/395,673 filed on 24 March 2003, currently pending.
2. The preliminary amendment filed on 23 January 2004 cancelled claims 1-10. Accordingly, claims 11-18 are pending.

### ***Specification***

3. The specification is objected to as failing to provide support for the claimed subject matter (see 37 CFR 1.75(d)(1) and MPEP § 608.01(o)). The specification does not provide support for the limitation *wherein the top portion is narrower than the bottom portion of the second conducting layer*, as recited in claim 14. However, the specification does provide support for the second conducting layer having a bottom portion that is narrower than the top portion of the first conducting layer (see specification - page 7, lines 5-7). Correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 14 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out

and distinctly claim the subject matter which applicant regards as the invention.

The claim language *the top portion* as recited in claim 14 is indefinite (claim 14, line 1). It is unclear from the recited claim language which layer has a top portion that is narrower than the bottom portion of the second conducting layer, the top portion of the first conducting layer or the top portion of the second conducting layer. Note, however, that the specification does not provide support for either the first conducting layer or the second conducting layer having a top portion that is narrower than the bottom portion of the second conducting layer. On the contrary, the second conducting layer has a bottom portion that is narrower than both the top portion of the second conducting layer and the top portion of the first conducting layer, whereas the top portion of the second conducting layer and the top portion of the first conducting layer are of equal width (specification page 7, lines 5-7). Correction is required in the response to this Office action.

For purposes of examination, the phrase *the top portion* is interpreted to mean either the top portion of the first conducting layer or the top portion of the second conducting layer.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 11-13 and 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Huang et al. (US 6,248,631 B1).

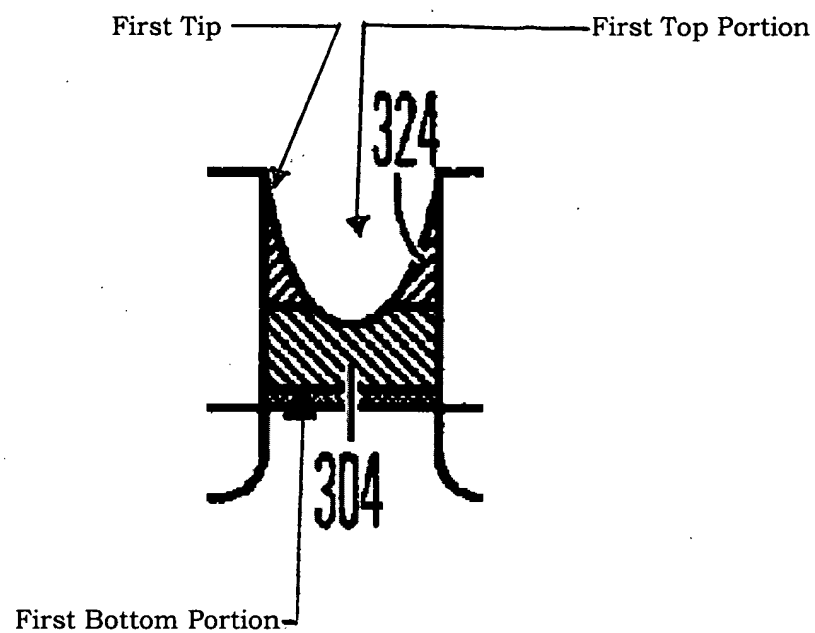
The Huang et al. patent (Huang) discloses a floating gate (see figs. 3A-3J and accompanying text). The floating gate comprises: a first conducting layer 304, 324 having a first top portion with a first tip and a first bottom portion (fig. 3G; col. 7, lines 44-48; col. 8, lines 21-24; and col. 8, lines 48-57); and a second conducting layer 327 having a second top portion with a second tip and a second bottom portion (fig. 3I; col. 8, lines 58-61; and col. 9, lines 1-7), wherein the second conducting layer is formed on the first conducting layer (fig. 3I; col. 8, lines 58-61; and col. 9, lines 1-7), the width of the second top portion is equal to the width of the first top portion (fig. 3J), the second bottom portion is narrower than the first top portion (fig. 3J), and a floating gate with multiple tips is constructed by the first conducting layer and the second conducting layer (fig. 3J and col. 9, lines 8-15).

The first conducting layer 304, 324 comprises a poly layer (col. 7, lines 44-48 and col. 8, lines 21-24).

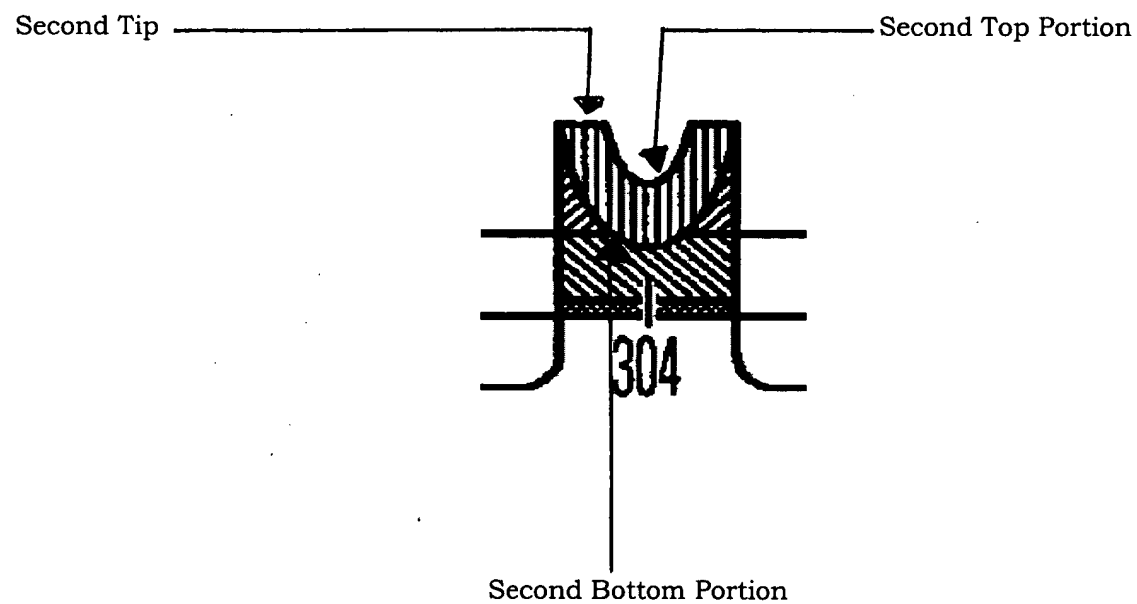
The second conducting layer 327 comprises a poly layer (col. 8, lines 58-61).

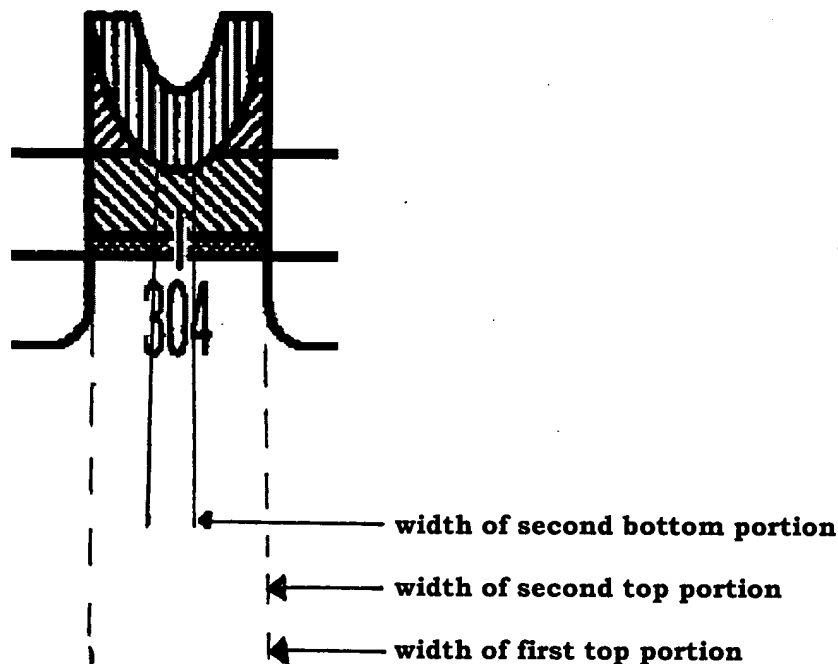
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### ***FIRST CONDUCTING LAYER***



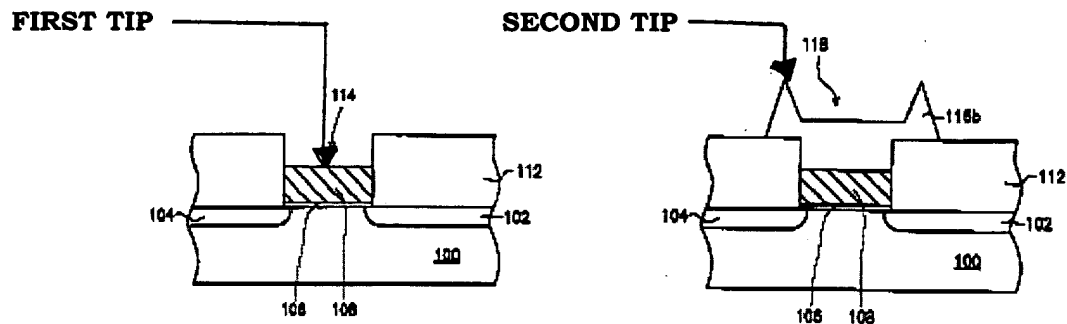
### ***SECOND CONDUCTING LAYER***





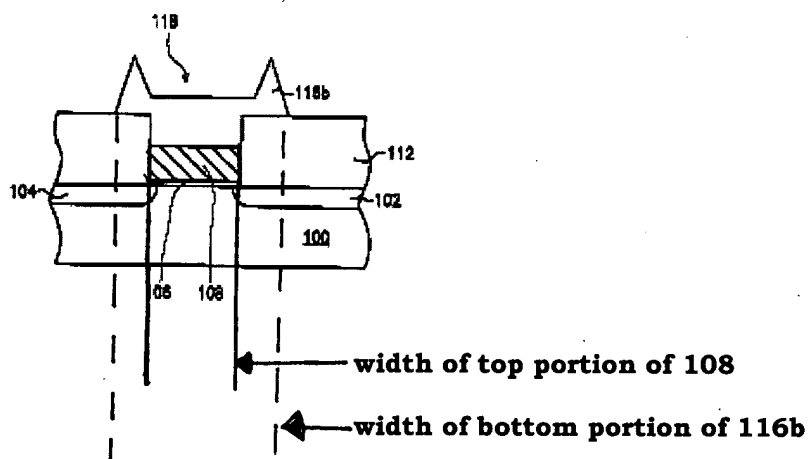
7. Claims 11, 13, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Chang (US 6,300,196 B1).

The Chang patent (Chang) discloses a floating gate (see figs. 5A-5G and accompanying text). The floating gate comprises: a first conducting layer 108 having a first tip (fig. 5A and col. 5, lines 55-58); and a second conducting layer 116b having a second tip (fig. 5G and col. 5, lines 58-61), wherein the second conducting layer is formed on the first conducting layer and a floating gate with multiple tips is constructed by the first conducting layer and the second conducting layer (fig. 5G and col. 6, lines 42-44).



The second conducting layer 116b comprises a poly layer (col. 5, lines 58-61).

The top portion of the first conducting 108 is narrower than the bottom portion of the second conducting layer 116b (fig. 5G).



### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang (pat '196) in view of Huang (pat '631).

While Chang discloses that the second conducting layer 116b comprises a poly layer, Chang does not disclose that the first conducting layer 108 comprises a poly layer. Huang, on the other hand, teaches a second conducting layer comprising a poly layer. As discussed above, Huang discloses a floating gate, which comprises a first conducting layer 304, 324 and a second conducting layer 327. The first conducting layer comprises a poly layer (col. 7, lines 44-48 and col. 8, lines 21-24). Likewise, the second conducting layer 327 comprises a poly layer (col. 8, lines 58-61 and col. 9, lines 1-7).

Chang and Huang are from the same field of endeavor, fabrication of Very Large Scale/Ultra Large Scale Integrated Circuits. Thus, the purpose for which Huang is relied upon would have been recognized by one of ordinary skill in the art at the time the invention was made.

Again, the second conducting layer 116b of Chang comprises a poly layer. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to also provide the first conducting layer 108 comprising poly, as taught by Huang, since the process flow for providing a first and a second conducting layer of the same material is simpler than the process flow required to provide a first and a second conducting layer of different materials.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toniae M. Thomas whose telephone number is (571) 272-1846. The examiner can normally be reached on Monday-Thursday from 8:30 a.m. to 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (571) 272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TMT  
23 May 2005



**Mary Wilczewski**  
**Primary Examiner**